

POST-LILAC FIRE: assessment implementation assistance

Presented by:

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when it all starts

- Alerts
- Mobilization
- Evacuation



in numbers

- Flames broke out on Dec. 7, 2017 just after 11 a.m. near I-15 and SR-76 in Bonsall
- 1,300 residents were forced to evacuate to nearby shelters
- 4,100 acres were scorched by the fire's end on Dec. 13
- 114 homes destroyed
- 55 other homes damaged
- 45 horses were killed
- Cause of the fire remains under investigation

Damage Assessment:

114 homes
were destroyed and 55 others
were damaged

2 business structures
were destroyed and
another five damaged

90 other
outbuildings, sheds, or barns
were destroyed and 20
damaged.

in numbers

- Fire and emergency response cost about \$5M
- Offset by state and federal reimbursement
- County's first use of the federal Wireless Emergency Alert system



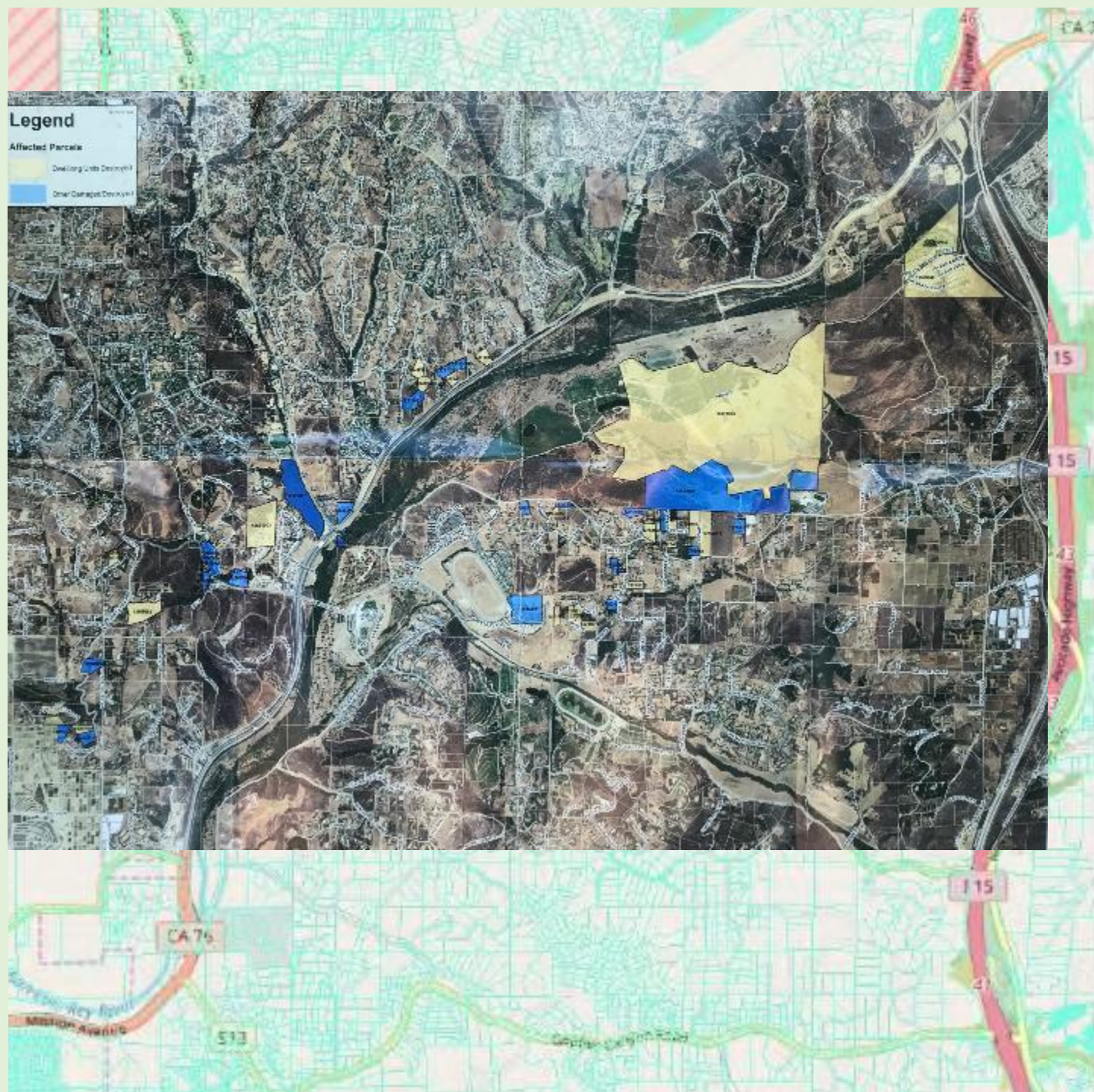
damage report

- plan view
- specific parcels

Affected Parcels:

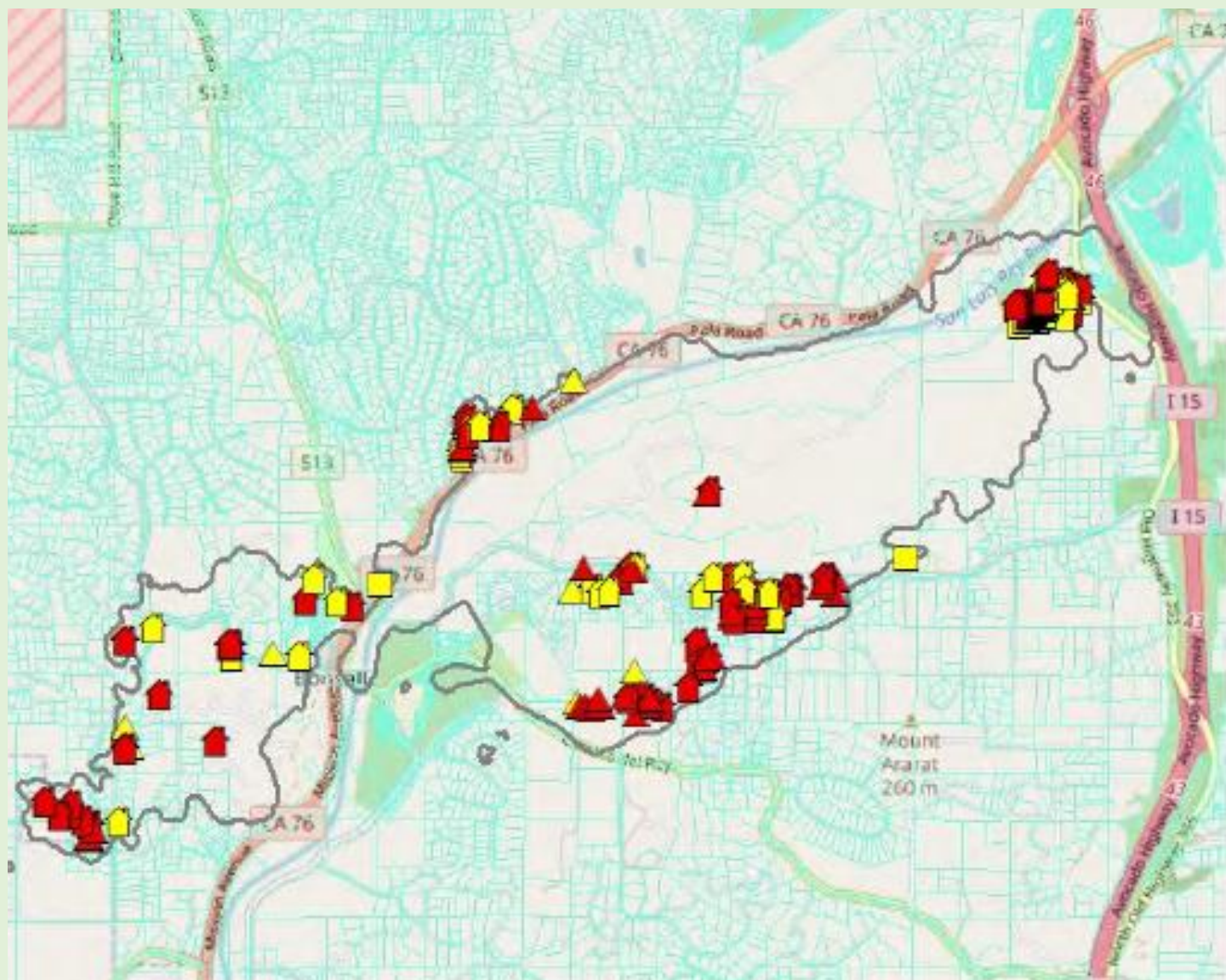
Dwelling Units
Destroyed

Other
Damaged/Destroyed



damage report

- plan view
- specific structures



Damage Inspection



Residence, Destroyed

Residence, Damaged

Commercial, Destroyed



Outbuilding, Destroyed

Outbuilding, Damaged

Other, Destroyed

Damage Inspection Overview Map

Lilac 5 Incident
CA MVU 024612
Date: 12/12/2017

damage report

Eastern Portion of the
Lilac Fire

Rancho Monserate
Mobile Home Park

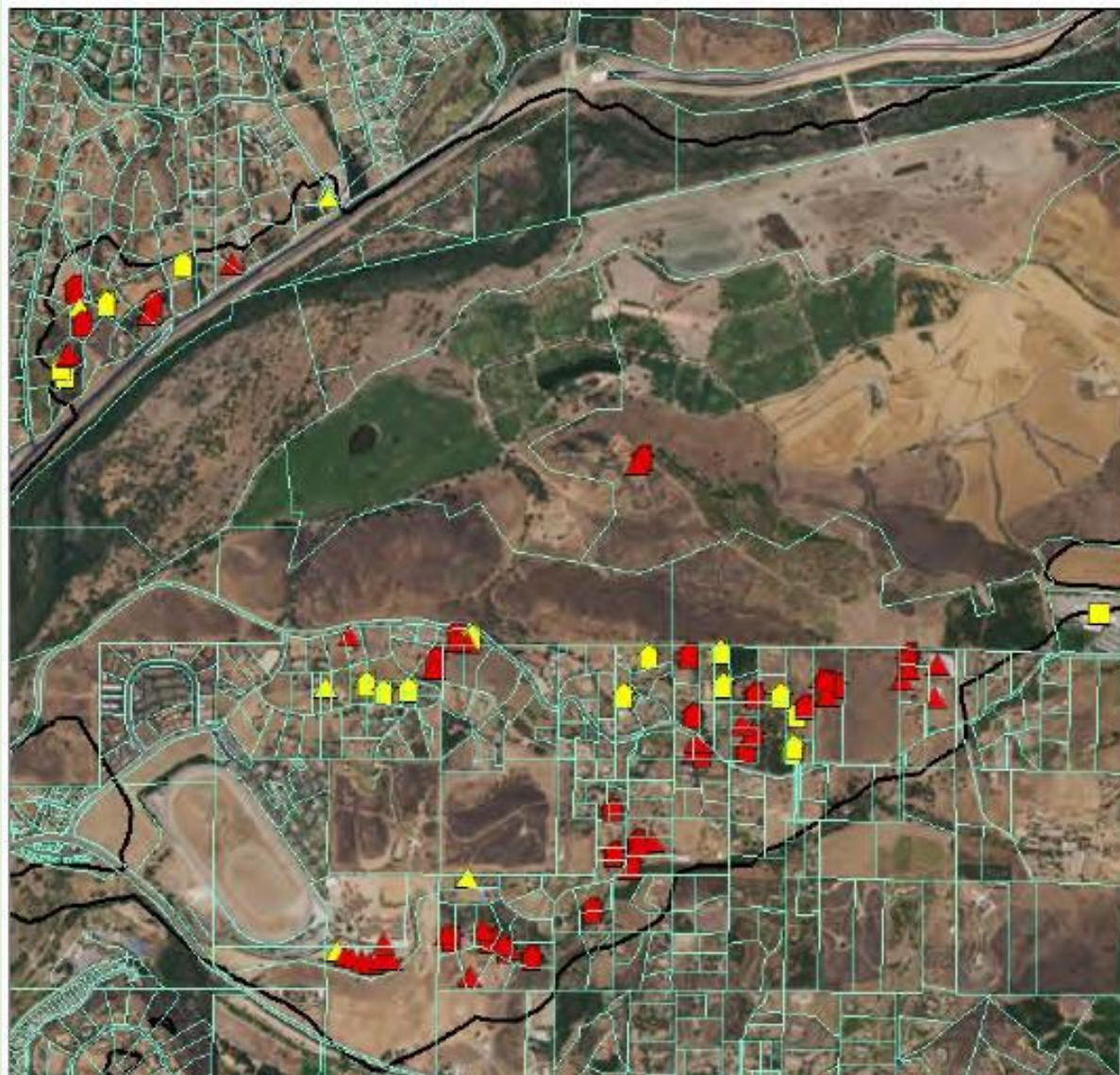


Damage Inspection Overview Map

Lilac 5 Incident
CA MVU 024612
Date: 12/12/2017

damage report

Central Portion
of the Lilac Fire



Damage Inspection



Residence, Destroyed

Residence, Damaged

Commercial, Destroyed



Outbuilding, Destroyed

Outbuilding, Damaged

Other, Destroyed

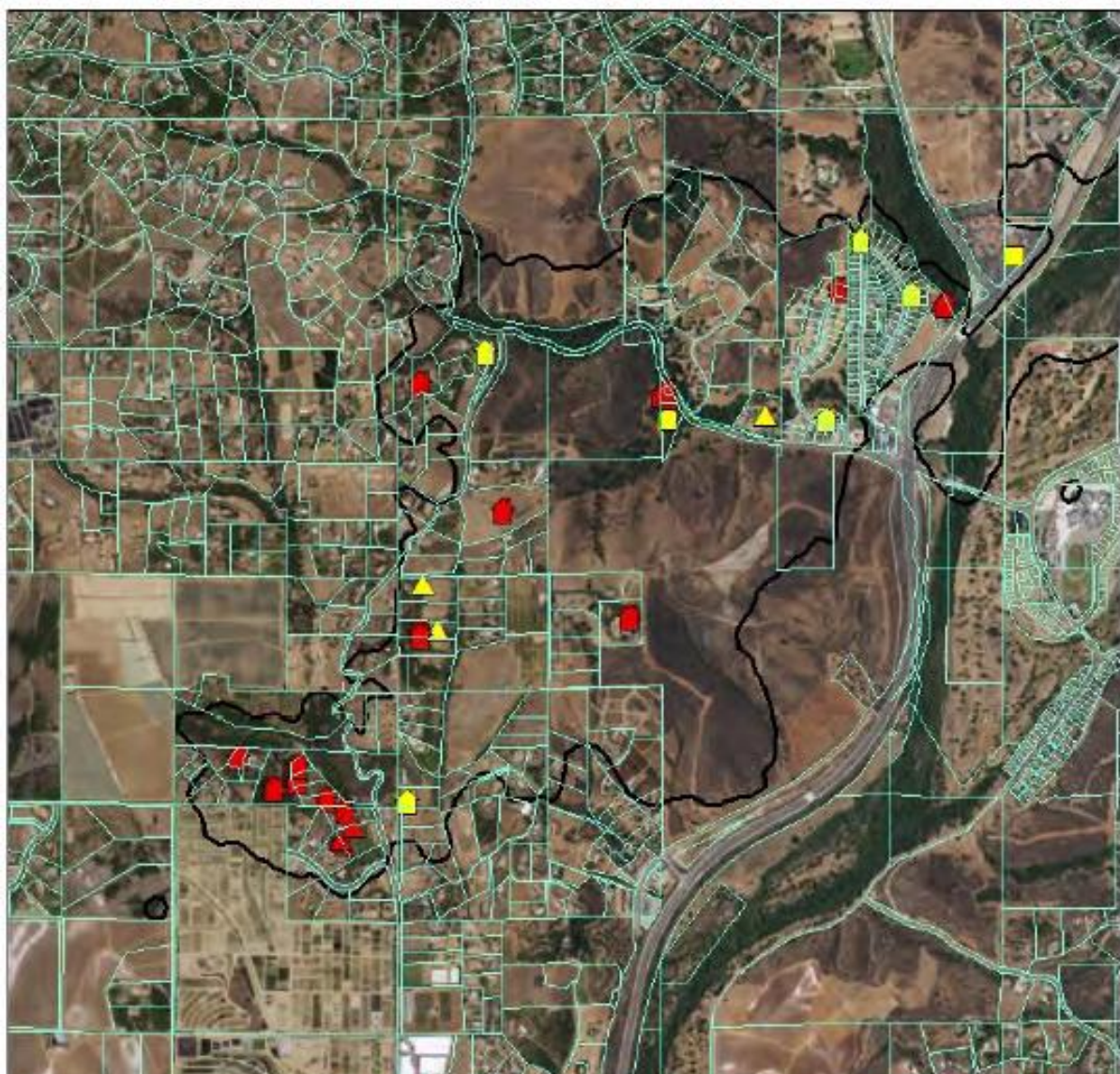
Damage Inspection Overview Map

Lilac 5 Incident
CA MVU 024612

Date : 12/12/2017

damage report

Western portion of the
Lilac Fire



Damage Inspection



Residence, Destroyed

Residence, Damaged

Commercial, Destroyed



Outbuilding, Destroyed

Outbuilding, Damaged

Other, Destroyed

Damage Inspection Overview Map

Lilac 5 Incident
CA MVU 024612

Date: 12/12/2017

Lilac Fire: After Action Report

County Releases Lilac Fire Response Report



Image Credit: San Diego County Sheriff's Department

By [Yvette Urrea Moe](#), County of San Diego Communications Office
Mar. 2, 2018 | 10:11 AM



Released March 2, 2018

Available at:

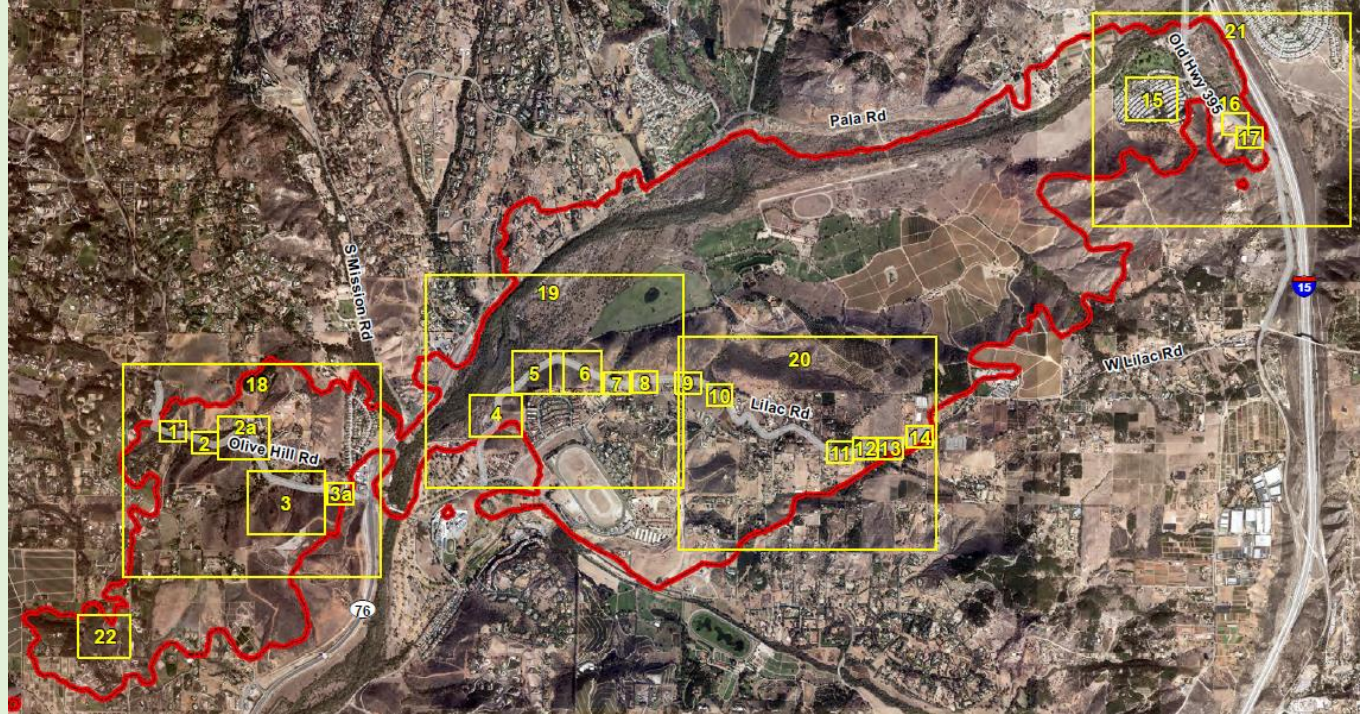
<http://www.readysandiego.org/aar/lilac-fire-december-2017/>

assessments

High Priority Roads

VS.

High Priority Sites



right of entry agreements

- Private Property as part of High Priority Roads (HPR)
- High Priority Sites (HPS)



contracts

- Assessments
- Qualified SWPPP Developer (QSD) Inspectors
- RFQ & RFB for Erosion Control
- RFQ & RFB for Hydro Mulch
- Traffic Control



BMPs considered

- Culvert Cleanout
- Inlet Protection
- Check Dams
- Berms
- Chevrons
- K-Rails
- Fiber Rolls
- Energy Dissipater
- Hydro Mulch



Culvert Cleanout

Function:

- Allows for free passage of water in culverts and channels
- Creates additional capacity for runoff volume in sediment retention structures

Equipment:

- Earth moving equipment (i.e. excavators, back hoes, etc.)
- Hand tools (i.e. shovels, picks, clippers, saws)



Inlet Protection

Function:

- Slows and temporarily ponds run-off before it enters the storm drain to allow sediment to settle
- Traps mobilized sediment, ash and debris making it easier for maintenance to remove after rainfall

Materials:

- Gravel-filled burlap bags (GBB)
- Gravel-filled plastic bags (GBP)
- Geotextile sock or rolls (GSR)



Check Dams

Function:

- For drainage and sediment control in large rills, gullies and in drainage swales to reduce water velocity and retain debris and sediment
- Bandaids bags: where large rills/small gullies exist which are too small for conventional check dams, gravel burlap bags can be dropped into the gully to retain sediment and repair the channel

Materials:

- Gravel-filled burlap bags (GBB)
- Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs)



Berms

Function:

- Slows and temporarily ponds run-off before it enters the storm drain to allow sediment to settle
- Traps mobilized sediment, ash and debris making it easier for maintenance to remove after rainfall

Materials:

- Gravel-filled burlap bags (GBB)
- Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs)



Chevrons

Function:

- Drainage and sediment control on longitudinal slopes and roadways to reduce water velocity and retain debris and sediment
- Gravel-filled burlap bags (GBB) or
- Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs)

Materials:

- Gravel-filled burlap bags (GBB)
- Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs)



K-Rails

Function:

- To divert, deflect or retain concentrated flows of debris and sediment to prevent damage to roads, infrastructure or private property

Materials:

- Concrete K-Rails require specialized equipment such as an excavator with hoist attachment or forklift



Fiber Rolls wrapped with Burlap

Function:

- Provide perimeter control around burned areas
- Reduce velocity and flow length in small drainage channels

Materials:

- Contents shall be Certified Weed Free Rice Straw wrapped in burlap or biodegradable fabric (not plastic netting) and shall not be moldy, decayed or injected or contain additives



Energy Dissipater (Rip Rap)

Function:

- Reduce flow velocity
- Protect underlying materials
- Reduce scour and erosion at discharge points

Materials:

- Geotextile/Filter fabric to separate energy dissipater from underlying soil
- Rip-Rap (angular stone, size dependent on velocity placed on top of the filter fabric)
- Reno Mattress and stone-filled gabions placed on top of the filter fabric
- Concrete energy dissipater



Hydro Mulch

Function:

- Immediate control of fugitive ash and dust
- Temporary soil erosion control from rain
- Promotion of vegetation establishment for long-term, sustainable erosion control



Applied to burned slopes using a two step application:

Step 1:

Slurry of water, mulch and tackifier mixed and applied at the following rates per acre:

- 1,500 gallons of water
- 500 pounds cellulose fiber trace mulch
- 200 pounds of guar based tackifier and dust palliative

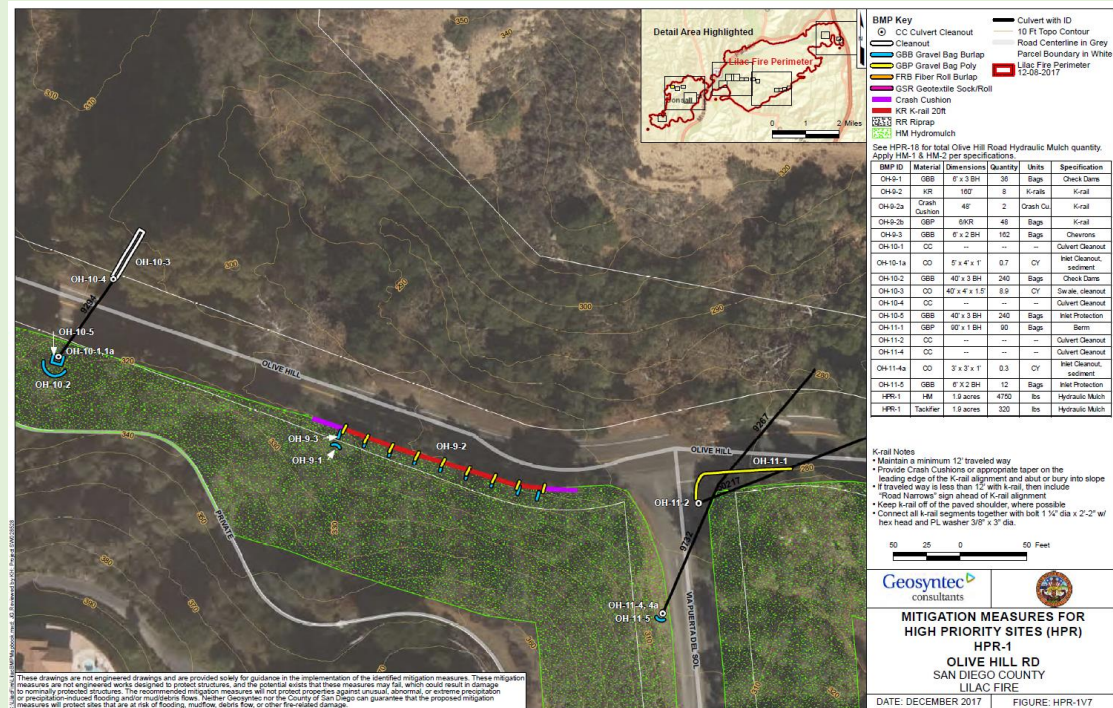
Step 2:

Standard hydraulic mulch applications with the following rates per acre:

- Gallons of water will be variable per machine
- 2,000 pounds per acres of mulch with tackifier

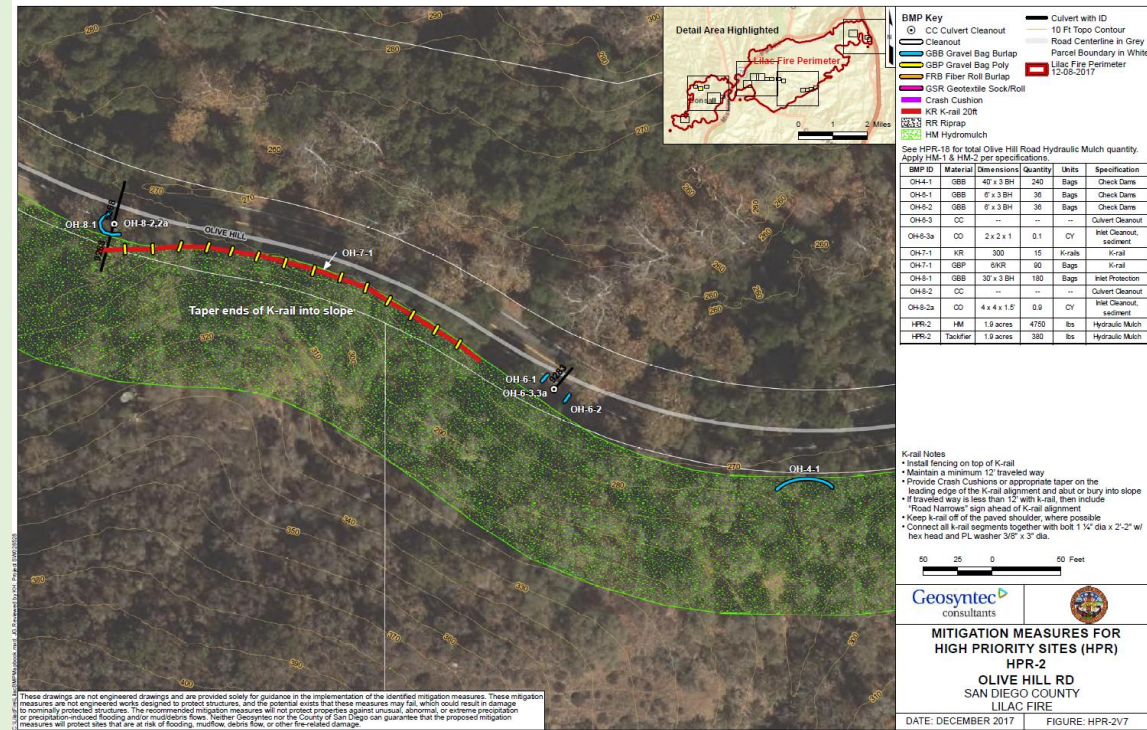
Olive Hill Road Assessments

High Priority Roads (HPR)



Olive Hill Road Assessments

High Priority Roads (HPR)

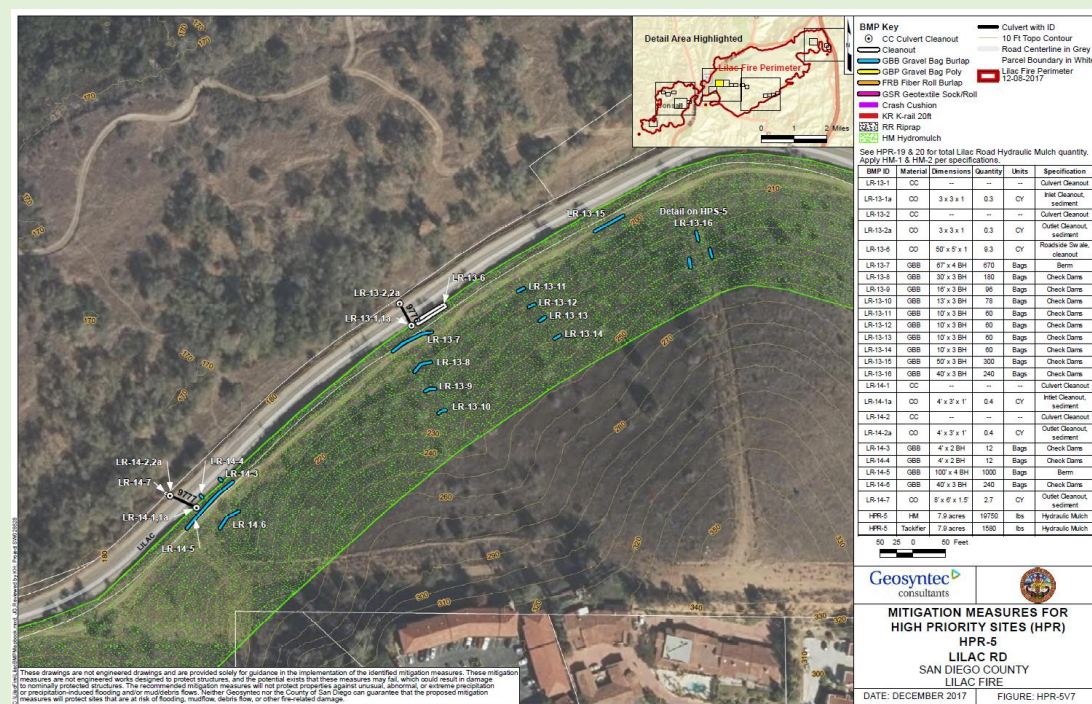


High Priority Roads (HPR)



W Lilac Road Assessments

High Priority Roads (HPR)

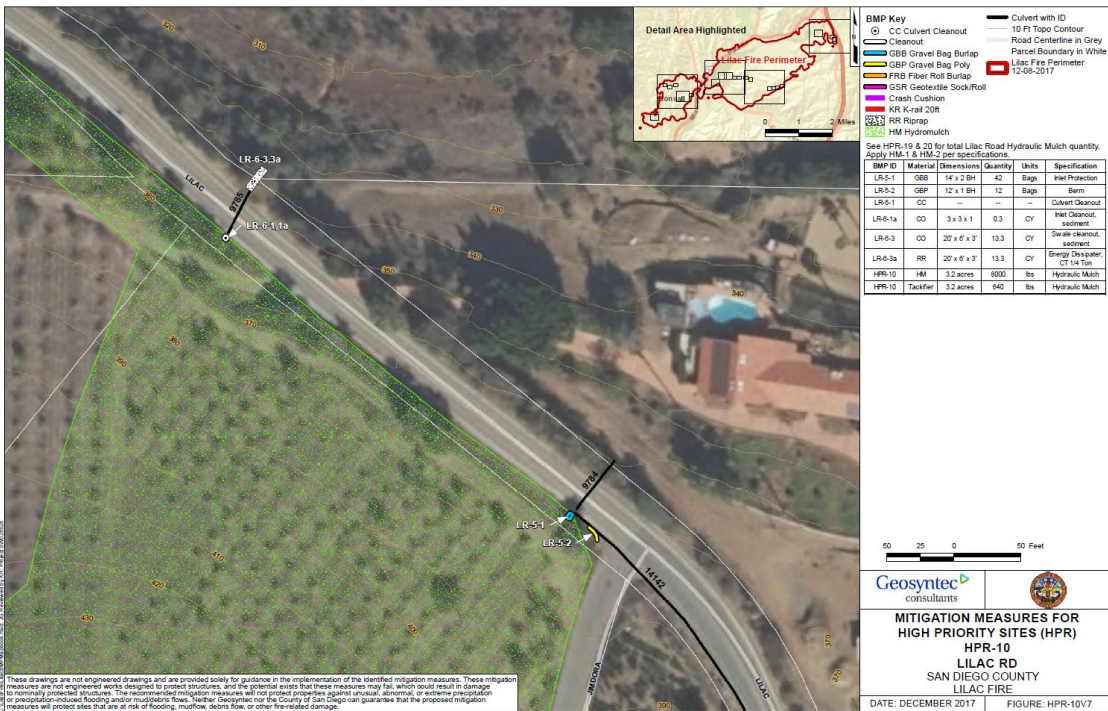


High Priority Roads (HPR)



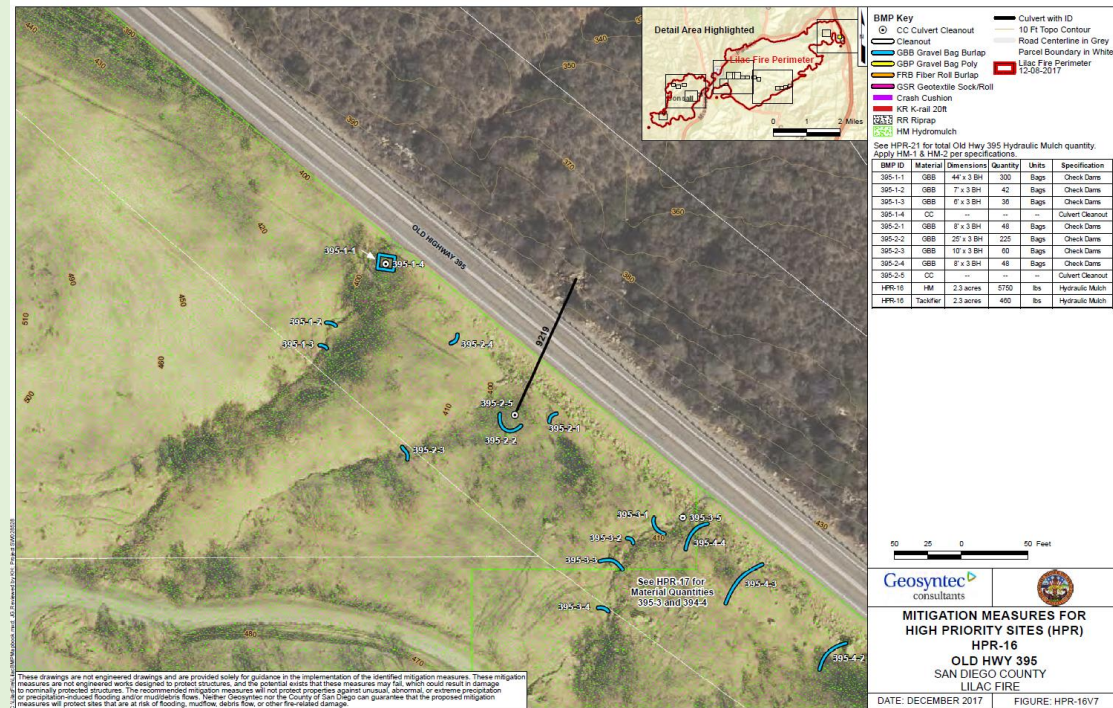
W Lilac Road Assessments

High Priority Roads (HPR)



Old Highway 395 Assessments

High Priority Roads (HPR)



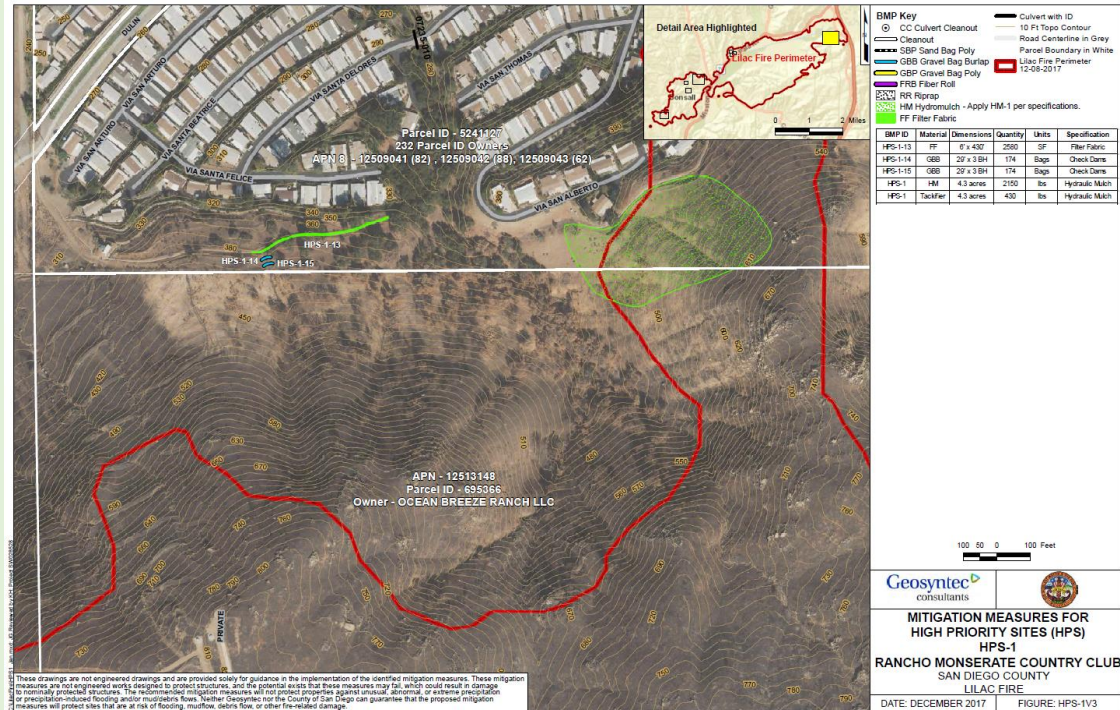
Old Highway 395 Assessments

High Priority Roads (HPR)



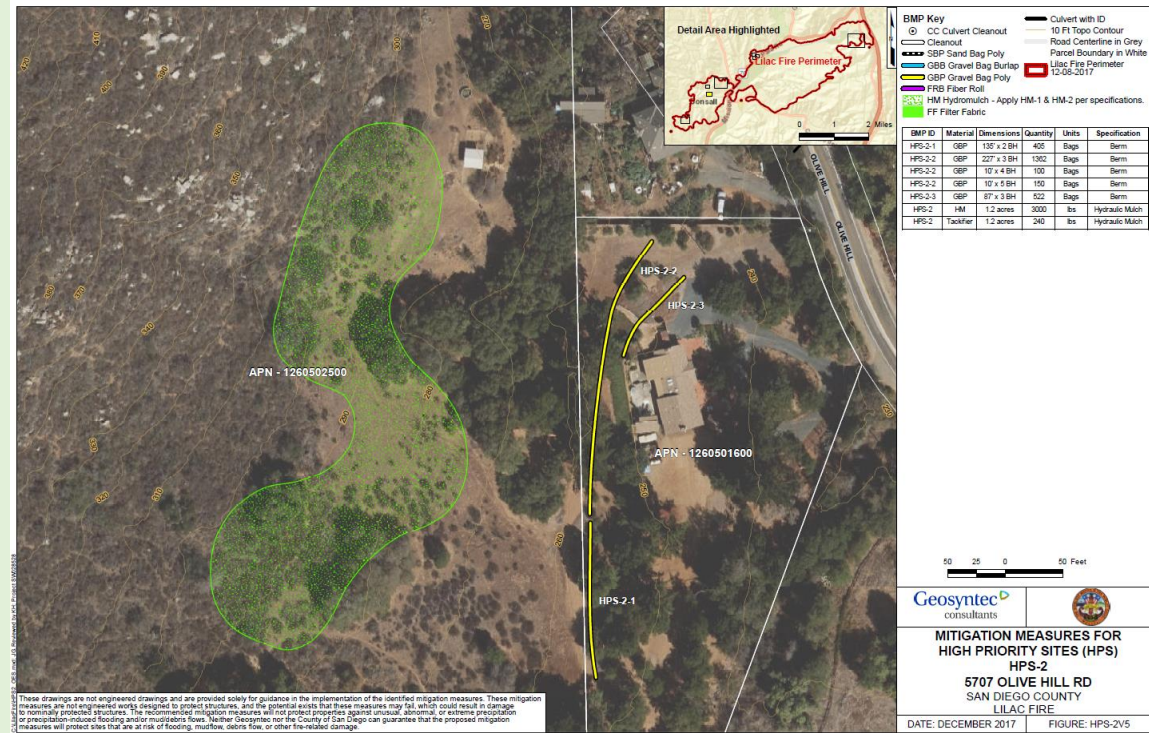
Rancho Monserate Mobile Home Park

High Priority Sites (HPS-1)



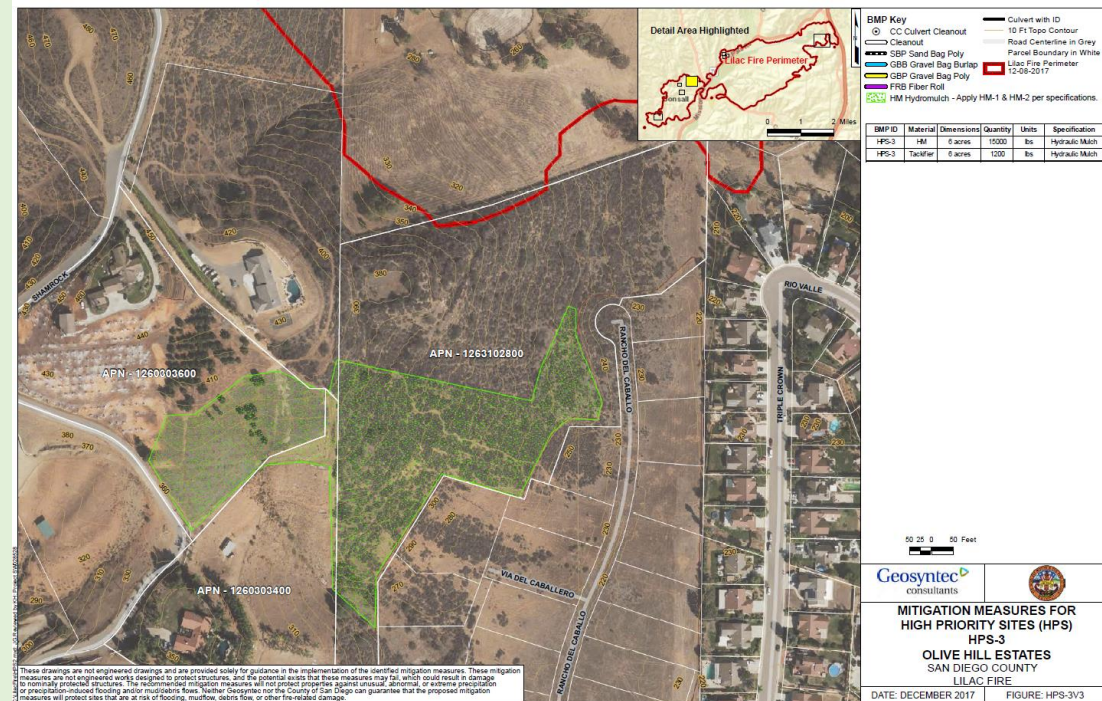
Orchid Farm

High Priority Sites (HPS-2)



Olive Hill Estates

High Priority Sites (HPS-3)

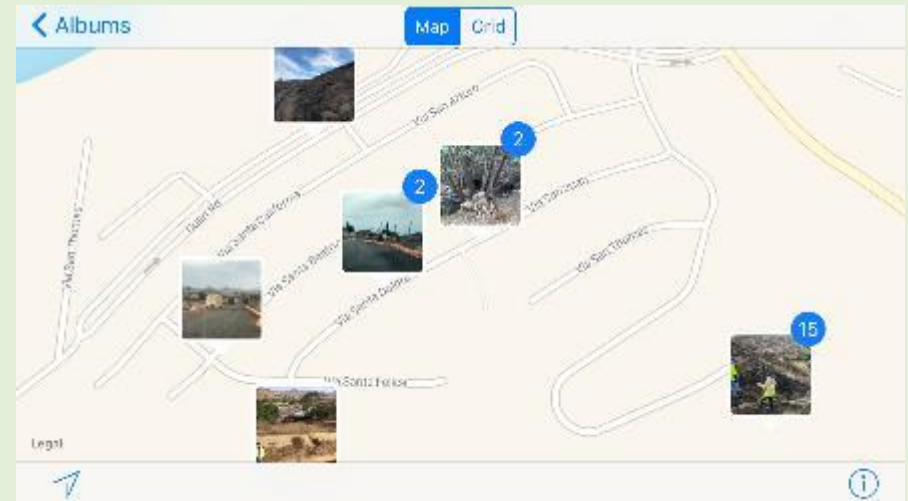
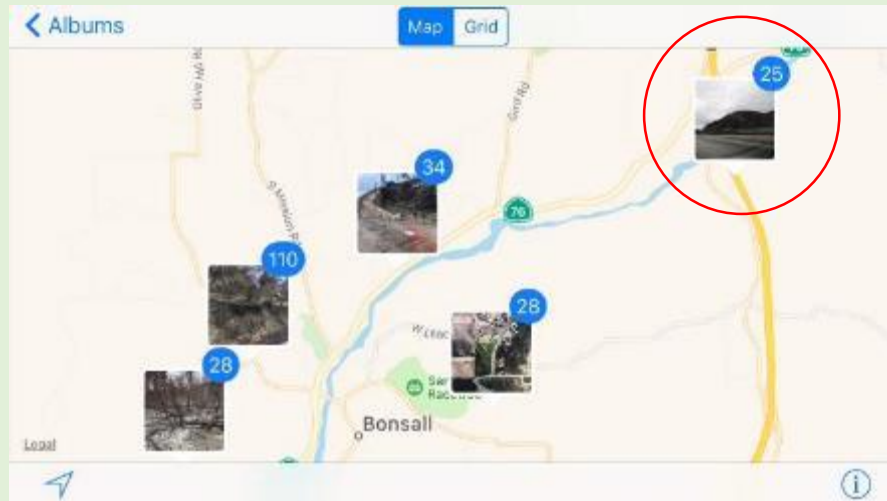


more right of entry agreements

Private Property within High Priority Roads (HPR)

High Priority Sites (HPS)

photo locations?



Implementation of Post-Fire Best Management Practices (BMPs)

- Culvert and Drainage (swale, inlet, etc.) Cleanout
- Inlet Protection
- Check Dams
- Berms
- Chevrons
- K-Rails
- Fiber Rolls
- Energy Dissipater
- Hydraulic Mulch

Olive Hill Road Implementation: HPR 1



Olive Hill Road Implementation: HPR-1



Olive Hill Road Implementation: HPR-2



Olive Hill Road Implementation: HPR-2a



Hydraulic mulch shall be applied to burned slopes using a two-step application as described below:

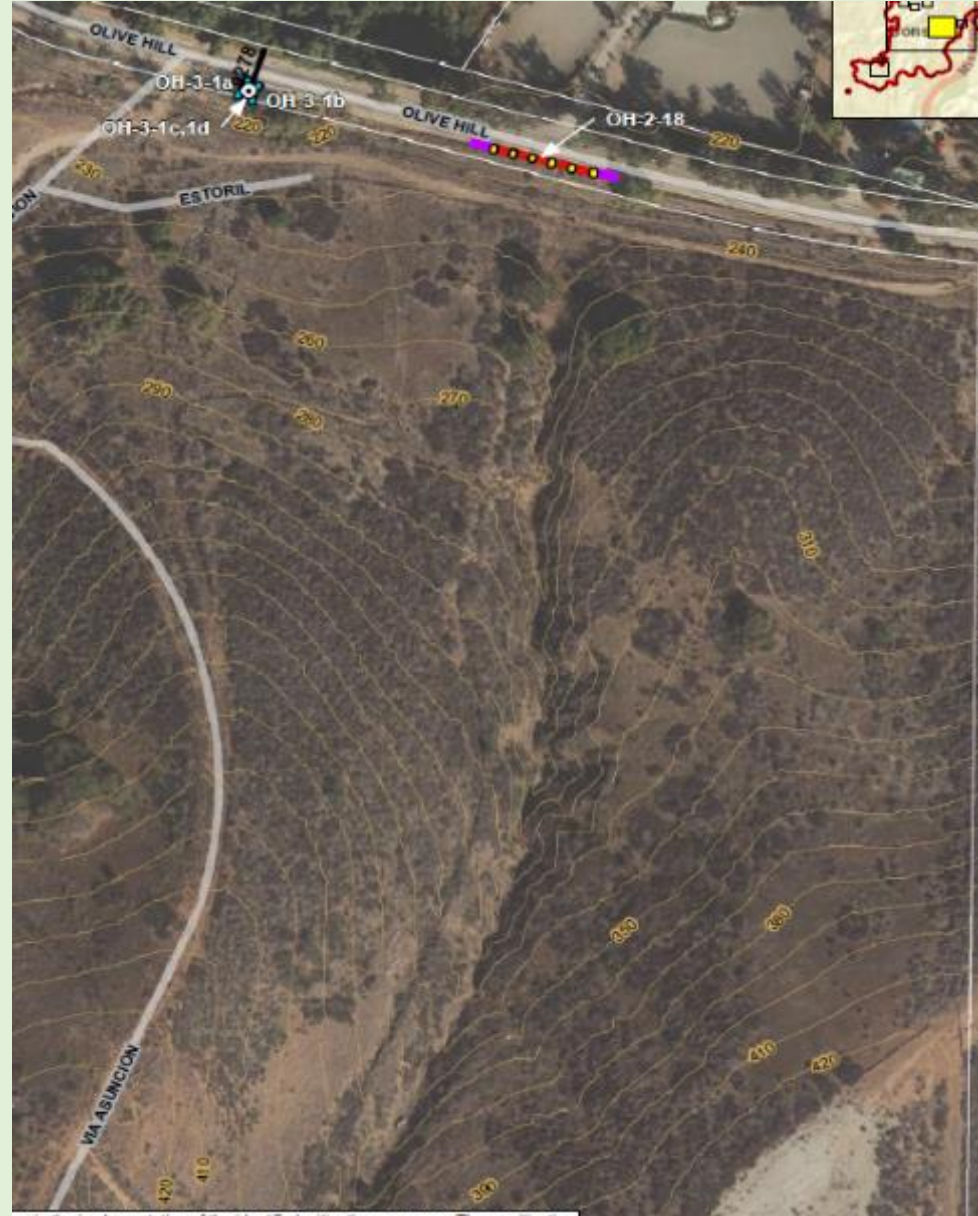
Step 1. HM-1 consists of a slurry of water, mulch and tackifier shall be mixed and applied at the following rates per acre:

- 1,500 gallons of water
- 500 pounds cellulose fiber trace mulch
- 200 pounds of guar based tackifier and dust palliative

Step 2. HM-2 consists of a standard hydraulic mulch applications with the following rates per acre:

- Gallons of water will be variable per machine
- 2,000 pounds of mulch with 4% tackifier per acre

Olive Hill Road Implementation: HPR-3



Olive Hill Road Implementation: HPR-3a



W Lilac Road Implementation: HPR-4



W Lilac Road Implementation: HPR-5



W Lilac Road Implementation: HPR-6



W Lilac Road Implementation: HPR-7



W Lilac Road Implementation: HPR-8



W Lilac Road Implementation: HPR-9



W Lilac Road Implementation: HPR-10



W Lilac Road Implementation: HPR-11

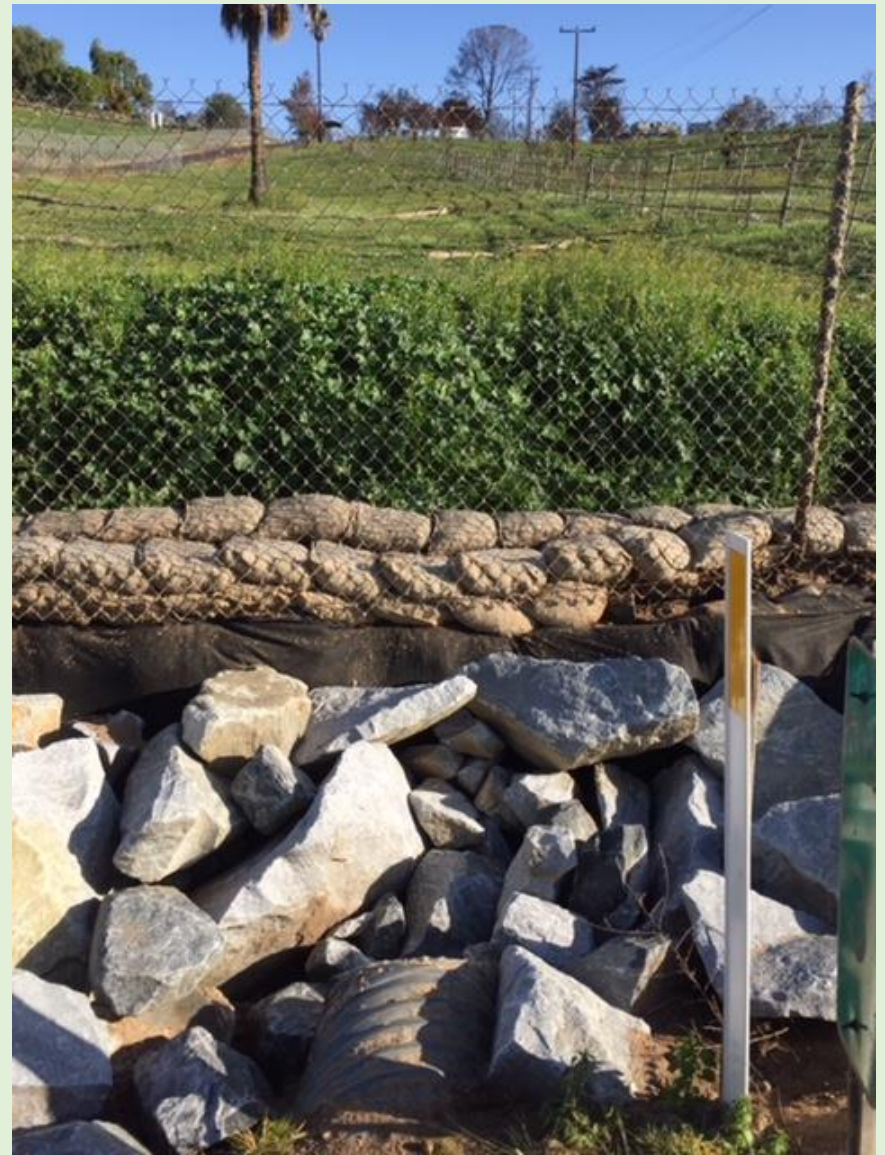


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W Lilac Road Implementation: HPR-12



W Lilac Road Implementation: HPR-12



W Lilac Road Implementation: HPR-13



W Lilac Road Implementation: HPR-14



Rancho Montserate Mobile Home Park: HPR-15



Old Highway 395 Implementation: HPR-16



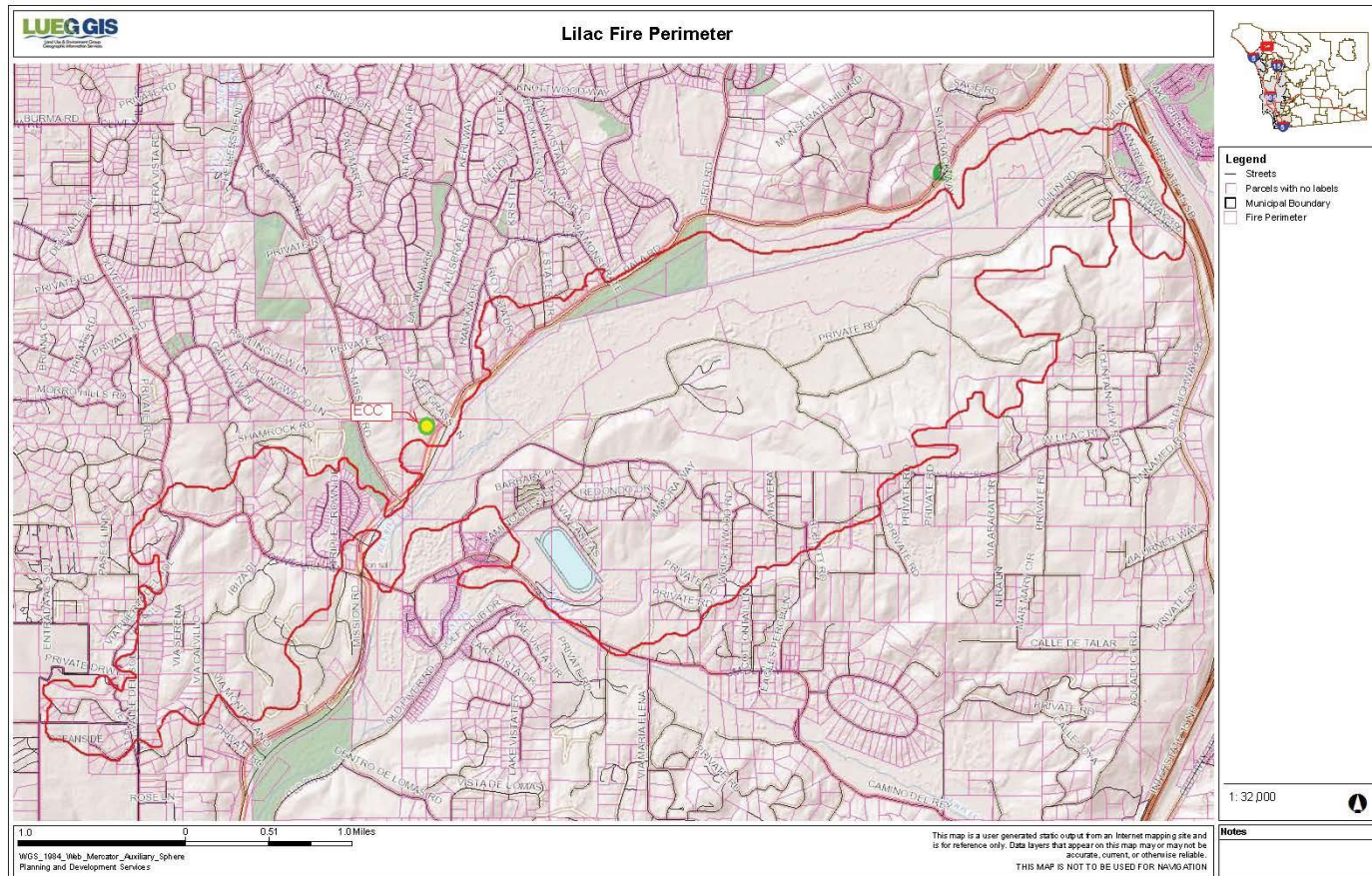
Old Highway 395 Implementation: HPR-17



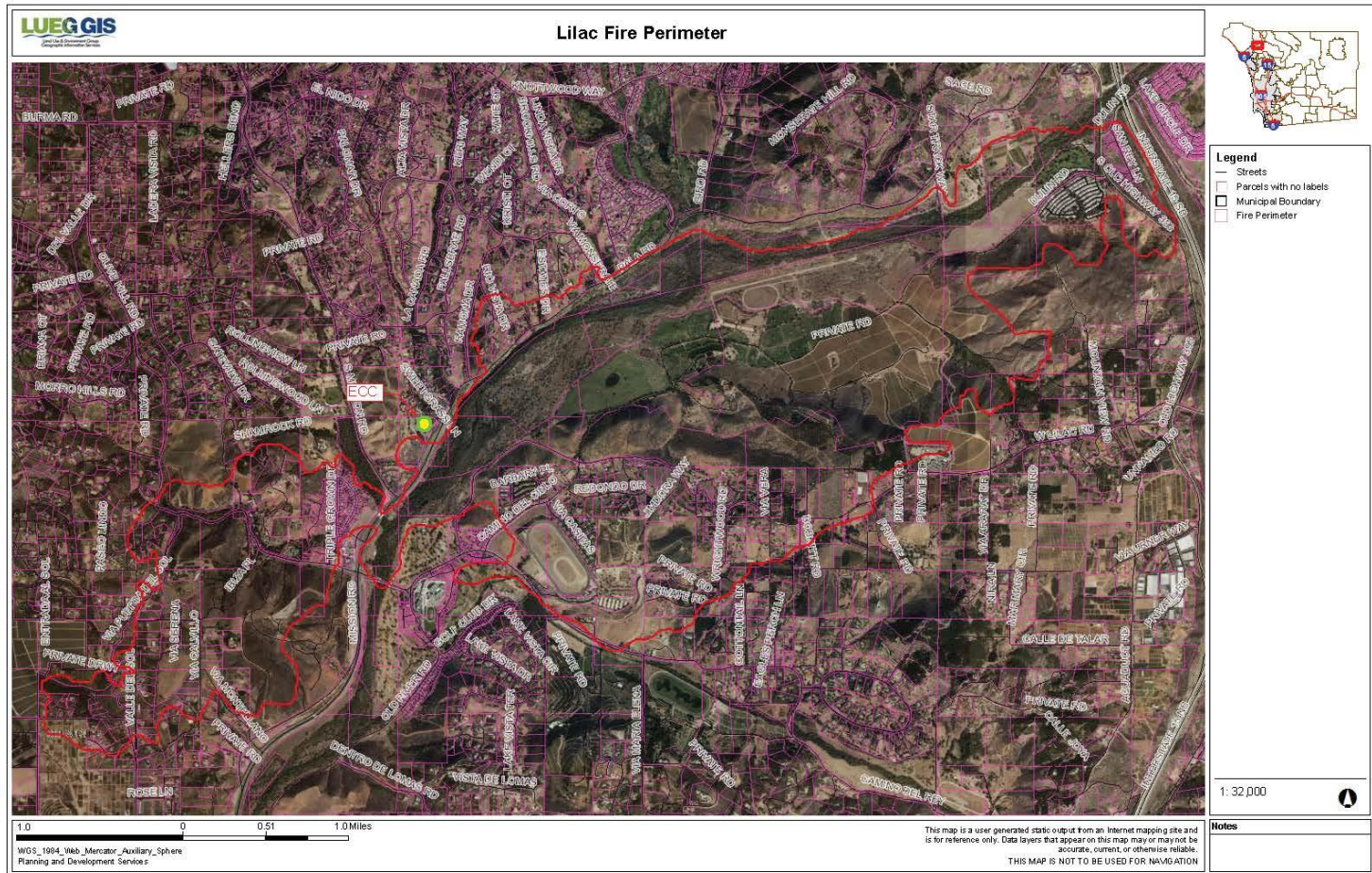
Rancho Monserate Mobile Home Park: HPS-1



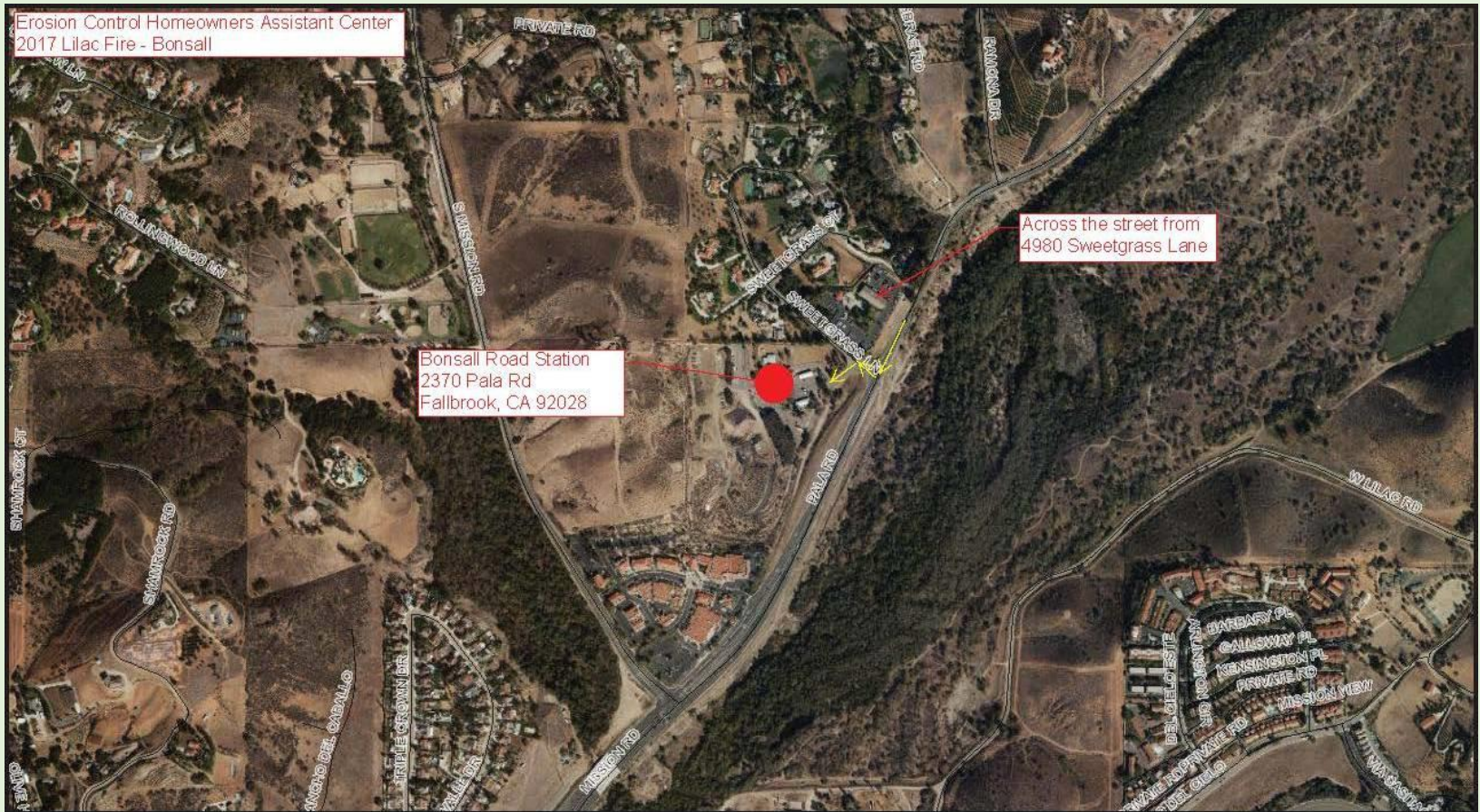
Erosion Control Homeowners Assistance Center (ECHAC)



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Erosion Control Homeowners Assistance Center (ECHAC)



66 days

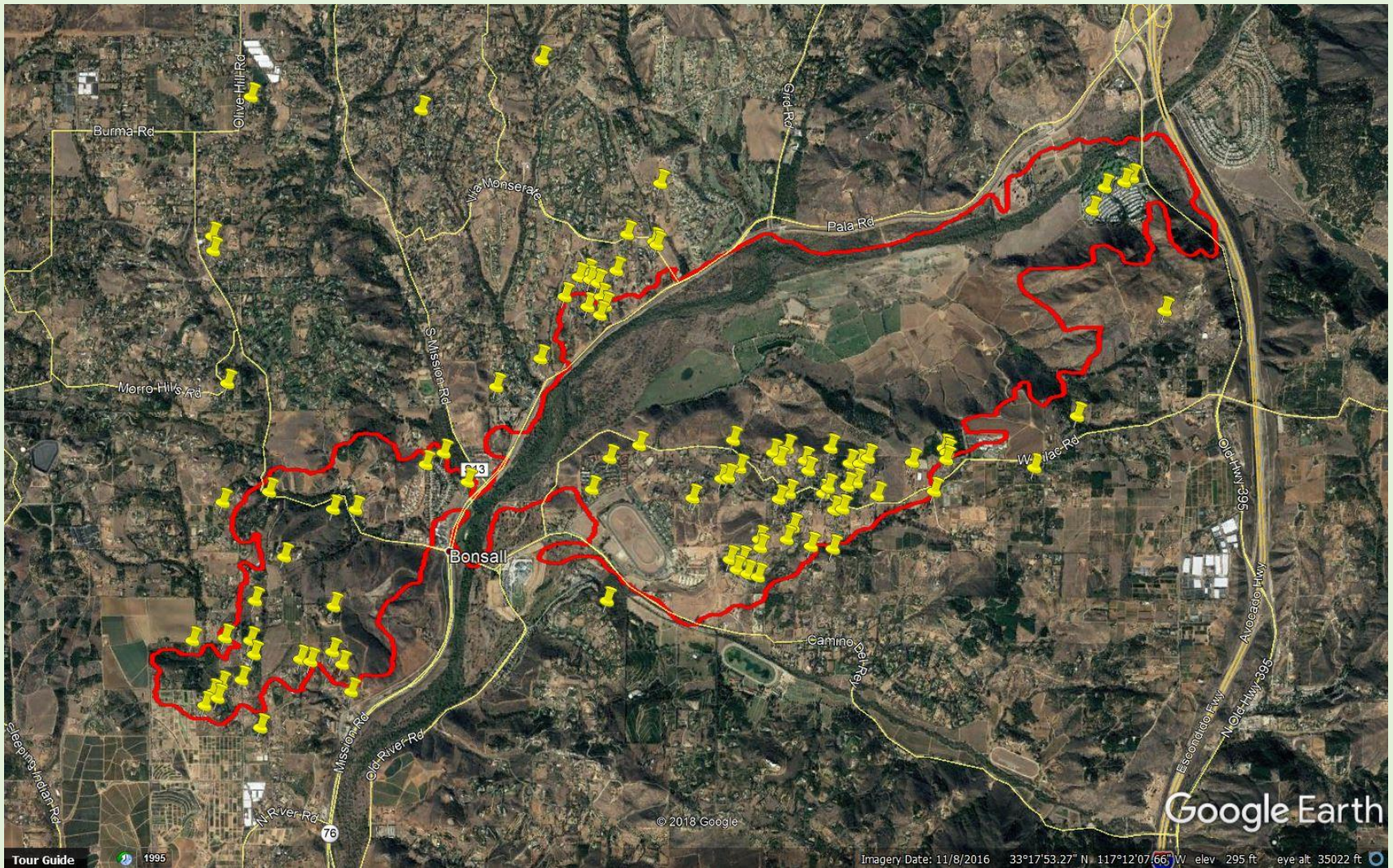
25 rotating staff

FC, WPP, PDCI, Roads, Wastewater, CIP

7 days a week

150 property owners

Property owners



BMPs



BMPs



hordeum brachyantherum

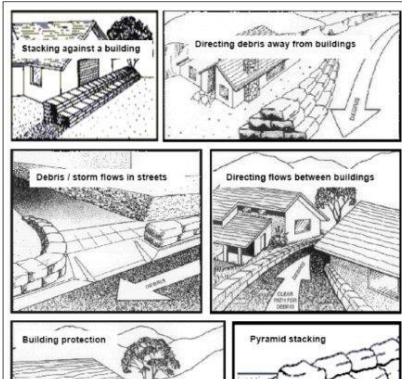


festuca rubra molate

** To calculate the square feet of a rectangular planting area, multiply the length in feet by the width in feet.
Example: 30 feet long times 20 feet wide equals 1000 square feet.*

Flyers

should be placed across the slope not more than two feet high as shown in Figure 2. Remember to clean out the silt trapped behind the bags after each storm.



To prevent water from seeping around a door, a rubber seal (similar to weather stripping) can be affixed to the doorframe. When the door is closed, a watertight seal should result. To prevent water from seeping around a sliding glass door, a plastic sheet (2 to 3 millimeters thick) should be placed between the door and the sandbags or between the door and the plywood barrier (see Figure 5). This is not recommended if water levels are anticipated to rise above two feet.

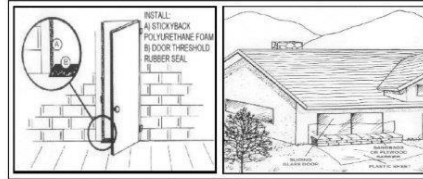
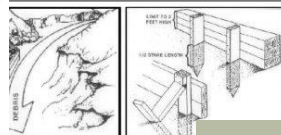


Figure 5 – Sealing Conventional and Sliding Glass Doors

For Structures - Low-grade lumber can be used to create a timber deflector (see Figure 6). This device should be limited to a height of three feet. When installing timber deflectors, drive stakes into the ground at least one-half their length to ensure proper anchorage. Place deflectors on solid, level soil if possible to reduce the hazard of undercutting.



FIBER ROLL IMPLEMENTATION

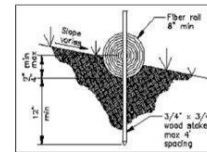
FIBER ROLLS for Post-Fire Runoff, Erosion, and Sediment Control
Fiber rolls should be used for erosion control after a fire to prevent property damage from rain events.



Straw Fiber Rolls consist of straw that is compacted into plastic netting to form a tube, usually with standard dimensions of 9 inches in diameter by 25 feet long. Fiber rolls have a number of applications:

- Across slope faces to shorten slope length, reduce runoff velocity, and retain sediment;
- Along the toe and top of slopes to spread runoff as sheet flow;
- As check dams in channels and drainage ways; and
- Along the perimeter of fire-affected lots to retain ash and sediment.

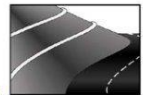
There are a few keys to fiber roll installation:



- They should be trenched according to the manufacturer's instructions;
- They should be held in place using wooden stakes;
- They should be inspected when rain is forecast;
- They should be repaired or replaced when split or torn; and
- Ash and sediment should be removed when it reaches $\frac{1}{4}$ of the roll height.

For more information or assistance about erosion and sediment control measures, call the County Stormwater Hotline: 1-888-846-0800

Or visit our website at www.sdcountyrecovery.com



Revised 10-25-07

FLOOD AFTER FIRE

Did you know that wildfires dramatically alter the terrain and increase the risk of floods?

Reduce your risk. The time to buy flood insurance is now.

Contact your local insurance agent for more information or visit the National Flood Insurance Program at www.fema.gov/national-flood-insurance-program



INUNDACIONES DESPUÉS DE UN INCENDIO

¿Sabía que los incendios forestales alteran drásticamente el terreno y aumentan el riesgo de inundación?

Reduzca su riesgo. El momento de comprar un seguro de inundación es ahora.

Para más información, comuníquese con su agente de agua y aumentan el riesgo de inundación. Programa del Seguro Nacional de Inundación en www.fema.gov/national-flood-insurance-program

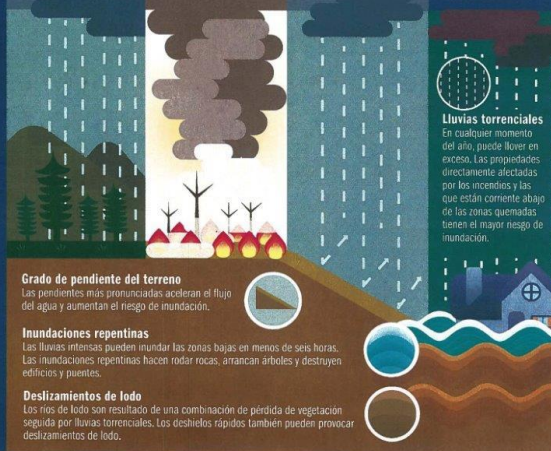


En condiciones normales, la vegetación ayuda a absorber el agua de lluvia.

Pero después de un incendio intenso, la vegetación quemada y el suelo carbonizado forman una capa repelente que bloquea la absorción del agua.

La próxima vez que llueva, el agua rebota del suelo.

Como resultado, las propiedades que están corriendo abajo de las zonas quemadas tienen mayor riesgo de inundación.



Grado de pendiente del terreno

Las pendientes más pronunciadas aceleran el flujo del agua y aumentan el riesgo de inundación.

Inundaciones repentinas

Las lluvias intensas pueden inundar las zonas bajas en menos de seis horas. Las inundaciones repentinas hacen rodar rocas, arrancan árboles y destruyen edificios y puentes.

Deslizamientos de lodo

Los ríos de lodo son resultado de una combinación de pérdida de vegetación seguida por lluvias torrenciales. Los desechos rápidos también pueden provocar deslizamientos de lodo.

An Unpro

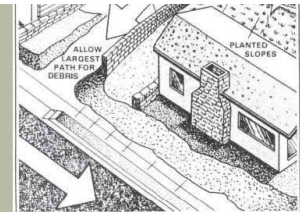


Figure 1: Examples of Unprotected vs. Protected Homes

Revised August 2015

ECHAC open for storms

SanDiegoCounty.gov Home



Department of Public Works



MENU ▾

I WANT TO ...

ROADS

ENGINEERING

ENVIRONMENT

DEVELOPMENT

AIRPORTS

SEWER

Erosion Control Homeowners Assistance Center in Bonsall, CA

NOW OPEN: 8 A.M. to 5 P.M.

Wednesday (3/21/18)

Thursday (3/22/18)

Friday (3/23/18)

Saturday (2/24/18)



For people living in and around the areas burned by the Lilac fire, sandbags and fiber rolls are available for free to help stabilize burned properties before winter rains arrive. Brochures are also available showing how to properly install the items to reduce potential damages to property from soil erosion caused by winter rains.

Erosion Control Homeowners Assistance Center Location:

Bonsall County Road Station

2370 Pala Rd, Fallbrook, CA, 92028

(Map search hint: Across the street from 4980 Sweetgrass Lane)

The Erosion Control Center will open before and during major rain storms. When open the dates and hours of operations will be posted at the top of this page.

For information or to schedule a property assessment, please call (888) 846-0800.

Resource Links

[Flood After Fire Infographic](#)

[Seeding for Erosion Guide](#)

[Erosion Control Brochure - Sandbags](#)

[Erosion Control Brochure - Fiber Rolls](#)



The [LUEG Open Performance](#) website provides a look into how the Land Use and Environment Group makes your life **BETTER** through the use of performance measures and data.



Popular Services



questions



René Vidales, Program Coordinator, Watershed Protection Program

Jeremy Fantaroni, Environmental Planner III, Watershed Protection Program

Mehdi Khalili, Civil Engineer, Flood Control District